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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,096	03/15/2004	Otman Basir	60,449-097	9269

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CARLSON, GASKEY & OLDS, P.C.  
400 WEST MAPLE ROAD  
SUITE 350  
BIRMINGHAM, MI 48009

EXAMINER

MANCHO, RONNIE M

ART UNIT PAPER NUMBER

3663

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/801,096	<b>Applicant(s)</b> BASIR ET AL.	
	<b>Examiner</b> Ronnie Mancho	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-24 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/23/04</u> . | 6) <input type="checkbox"/> Other: _____  |

*ck*

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamel (5528698).

Regarding claim 1, Kamel et al (figs. 1-3, 6-8) disclose a method for classifying an occupant including the steps of:

- a). capturing an image of a plurality of occupant areas (abstract);
- b). dividing the image into a plurality of subimages of predetermined spatial regions (col. 6, lines 18-39);
- c). generating a spatial feature matrix of the image based upon the plurality of subimages (pixels, col. 6, lines 18-39); ;
- d). analyzing the spatial feature matrix (col. 6, lines 11-39); and
- e). classifying a plurality of occupants (col. 6, lines 51 to col. 7, lines 14) in the occupant areas based upon said step d).

Regarding claim 2, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 further including the step of processing the image to account for lighting and motion before said step d).

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Regarding claim 3, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 further including the step of smoothing the classification of the occupant over time.

Regarding claim 4, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 further including the step of determining whether to activate an active restraint based upon the classification of said step e).

Regarding claim 5, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 wherein said step d) further includes the step of applying expert classifier algorithm to the spatial feature matrix.

Regarding claim 6, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 5 wherein said step d) further includes the step of analyzing the spatial feature matrix based upon a set of training data.

Regarding claim 7, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 6 further including the step of creating the set of training data by capturing a plurality of images of known occupant classifications of the occupant area.

Regarding claim 8, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 5 wherein the expert classifier algorithm includes a neural network.

Regarding claim 9, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 wherein the plurality of subimages overlap one another.

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Regarding claim 10, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system comprising: an image sensor for capturing an image of a plurality of occupant areas; and a processor dividing the image into a plurality of subimages, the processor analyzing the subimages to determine a classification of the occupants in each of the plurality of occupant areas.

Regarding claim 11, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 wherein the processor determines the classification of the occupant from among the classifications including: adult, child and infant seat.

Regarding claim 12, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 11 wherein the processor determines the classification of the occupant from among the classifications including: adult, child, forward-facing infant seat and rearward-facing infant seat.

Regarding claim 13, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 wherein the processor generates a spatial feature matrix based upon the plurality of subimages.

Regarding claim 14, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 13 further including at least one filter generating the spatial feature matrix based upon the plurality of subimages.

Regarding claim 15, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 14 further including an image processor for altering the image based upon lighting conditions and based upon motion.

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Regarding claim 16, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 15 wherein the processor analyzes the spatial feature matrix to determine the occupant classification using a neural network.

Regarding claim 17, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 further including a temporal smoothing filter applying a decaying weighting function to a plurality of previous occupant classifications to determine a present occupant classification.

Regarding claim 18, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 17 further including a confidence weighting function applied to the plurality of previous occupant classifications to determine the present occupant classification.

Regarding claim 19, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 further including a plurality of digital filters extracting low-level descriptors from each of the subimages, the processor analyzing the low-level descriptors to determine the classification of the occupant.

Regarding claim 20, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method for classifying an occupant including the steps of: a. capturing an image of a plurality of occupant areas; b. dividing the image into a plurality of subimages of predetermined spatial regions; c. generating a plurality of low-level descriptors from each of the plurality of subimages; d. analyzing the low-level descriptors; and e. classifying an occupant in each of the plurality of occupant areas based upon step d).

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Regarding claim 21, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 20 wherein said step d) further includes the step of analyzing the low-level descriptors based upon a set of training data.

Regarding claim 22, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 21 further including the step of creating the set of training data by capturing a plurality of images of known occupant classifications of the occupant area.

Regarding claim 23, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 20 wherein said steps d) and e) are performed using a neural network.

Regarding claim 24, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 20 wherein said step d) is based upon system parameters including an orientation or a location from which the image is captured relative to the occupant area.

### ***Communication***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 703-305-6318. The examiner can normally be reached on Mon-Thurs; 9-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 703-305-9707. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho  
Examiner  
Art Unit 3663

9/30/05

  
JACK KEITH  
PRIMARY EXAMINER  
SPE 3663